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ON THE INCIDENCE OF RESPIRATORY ORGAN DISEASE
SYMPTOMS AMONG KINDERGARTEN CHILDREN IN
DISTRICTS POLLUTED BY NO, NO₂ AND HCl GAS (3-13)

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Minoru Nagata, Yoko Ito, Katsuhiko Tjuji

3-13 ON THE INCIDENCE OF RESPIRATORY ORGAN DISEASE SYMPTOMS
AMONG KINDERGARTEN CHILDREN IN DISTRICTS POLLUTED
BY NO, NO₂ AND HCl GAS

[3-13 NO, NO₂, HCl Gasu ni Yoru Osen Chiku Yochien Ko No
Kokyuki Shojo Yushojokyo]

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Minoru Nagata, Yoko Ito, Katsuhiko Tjuji*

3-13 ON THE INCIDENCE OF RESPIRATORY ORGAN DISEASE SYMPTOMS
AMONG KINDERGARTEN CHILDREN IN DISTRICTS POLLUTED BY NO, NO₂
AND HCl GAS.

The gas and smoke emitted by the groups of chemical factories in Shibukawa City, Gumma Prefecture, which was suspected of being the source of the foul-smelling water incident in Tokyo, causes marked damage to trees, agricultural products and buildings (of the metal type).

The concentration of the principal pollutants are as follows: Cl₂ 0.01 ppm, HCl gas 0.9 ppm, NO and NO₂ 0.1 ppm, SO₂ 0.05 ppm (these are all the maximum concentrations for the one-hour values). We are still in the process of surveying the effects on human beings in this district, however, the results to date may be summarized as follows:

(1) The FVC and FEV_{1.0} of the children in the schools, attended by the children from the districts around the factories, are significantly lower than those of the children in other primary schools.

(2) No significant difference was observed in the PFR, however.

(3) On the basis of BMRC questionnaires covering adults, the incidence of symptoms tends to be higher in the districts surrounding the factories. Because the sampling rate was low (approximately 40% 2,300 individuals), however, it has not been possible to obtain a definitive viewpoint.

On the present occasion, a questionnaire concerning symptoms of the respiratory organs was distributed to the children in kindergartens and nursery schools in all areas of the city to obtain entries made by their mothers.

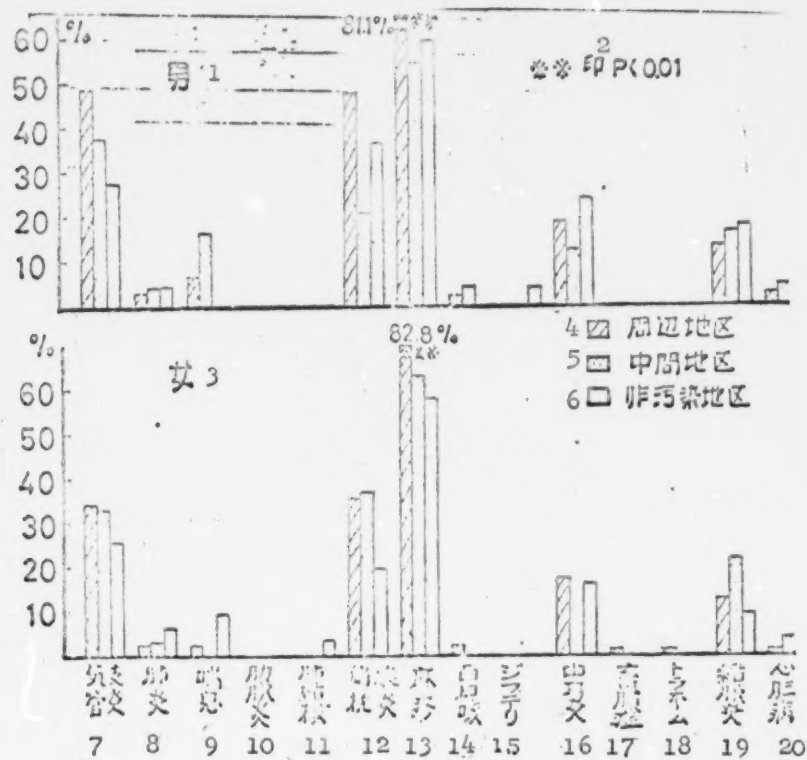
* Department of Public Health, School of Medicine, Gumma University

The table and figure given below show the results for a portion of the areas in which the survey has been completed. In the case of the number of colds contracted throughout the year, there is a significantly higher rate among the boys in the districts around the factories, but this trend was not observed among the girls. The fact that the incidence of measles in the medical histories of those living in the vicinity of the factories was high was striking.

1 男	2 年間かぜ罹患回数				6 計
	1-2回	3-4回	5-6回	7回以上	
3 周辺地区	15 203	23 378	16 3*	419%	74
4 中間地区	7 292	9 375	5 3	333%	24
5 非汚染地	6 273	12 545	2 2	182%	22
6 計	28	49	25	18	120
*印 P<0.05					
7 女	8				6 計
	1-2回	3-4回	5-6回	7回以上	
3 周辺地区	28 32.2	35 40.2	16 8	27.6%	87
4 中間地区	7 259	8 29.6	8 4	44.4%	27
5 非汚染地	9 29.0	11 33.5	6 3	35.5%	31
6 計	44	54	32	15	145

Key:

- 1 - males; 2 - number of colds contracted per year;
- 3 - surrounding districts; 4 - intermediate districts;
- 5 - unpolluted districts; 6 - total; 7 - females;
- 8 - indicates; 9 - 1 - 2 times; 10 - 3 - 4 times;
- 11 - 5 - 6 times; 12 - 7 times or more.



Key:

1 - males; 2 - indicates; 3 - females; 4 - surrounding districts; 5 - intermediate districts; 6 - unpolluted districts; 7 - bronchitis; 8 - pneumonia; 9 - asthma; 10 - pleurisy; 11 - pulmonary tuberculosis; 12 - tonsillitis; 13 - measles; 14 - whooping cough; 15 - diphtheria; 16 - typanitis; 17 - emphyema; 18 - trachoma; 19 - conjunctivitis; 20 - heart disease.